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09/215,421	12/18/1998	PAUL CHANG	16845-3	7395

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EXAMINER

SCHULTZ, WILLIAM C

ART UNIT PAPER NUMBER

2664

DATE MAILED: 10/21/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/215,421

Applicant(s)

CHANG ET AL.

Examiner

William C. Schultz

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,12-19,22-25 and 28-34 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

- 5) ☐ Claim(s) _____ is/are allowed.

- 6) ☒ Claim(s) 1-7,12-19,22-25,28-30,33 and 34 is/are rejected.

- 7) ☒ Claim(s) 31,32 is/are objected to.

- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4,6 are rejected under 35 U.S.C. 102(b) as being anticipated by Ernst et al.

[U.S. Pat. 5,381,348].

Regarding claim 1, Ernst et al. discloses all subject matters as following: A test set for testing a communications network comprising: at least one signal input port; test circuitry coupled to the at least one signal input port, the test circuitry receiving signals from the signal input port and generating test data; a processor coupled to the test circuitry, the processor receiving test data and generating test results; a user input device coupled to the processor, the user input device sending commands to the processor; and a display operatively coupled to the processor, the display receiving and showing the test results, wherein the test set is capable of performing line qualification and connectivity testing. **(figures 6A, 27)**

Regarding claim 2, Ernst et al. further discloses line qualification includes transmission line tests, the transmission line tests includes at least one of digital multimeter tests, transmission impairment measurement set (TIMS) tests, and time domain reflection (TDR) tests. **(abstract)**

Regarding claim 3, Ernst et al. further discloses the display is a graphical display. **(figure 27)**

Regarding claim 4, Ernst et al. further the graphical display shows selected ones of the test results in a graphical form.

Regarding claim 6, Ernst et al. further discloses connectivity testing is performed using a predetermined transmission technology. **(abstract)**

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7,12-19,22-25,28-30,33,34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ernst et al. [U.S. Pat. 5,381,348] as applied to claim 1 above, and further in view of Kahkoska et al. [U.S. Pat. 6,002,671].

Regarding claim 7, Ernst et al. discloses claim 6 as above but fails to disclose the predetermined transmission technology is one of E1, T1, ISDN, DSL, HDSL, ADSL, and xDSL. Ernst et al. shows a token ring for the connected medium, the use of E1, T1, ISDN, DSL, HDSL, ADSL, and xDSL for the lan medium is equivalent to token ring.

It would be obvious for one skilled in the art at the time of invention to modify Ernst et al. to be compatible with recent technology.

Regarding claim 12, Ernst et al. discloses as above but fails to disclose a modem module operatively coupled to the processor, the modem module receiving and processing the test data

and generating processed results, and wherein the display receives and displays the processed results.

Kahkoska et al. discloses the above limitation with respect to using an ADSL modem connected to the test equipment by a lan connection. Looking at figure 6A of Ernst et al. the network control box could be replaced by the ADSL modem of Kahkoska et al. to achieve the above limitation. **(abstract, lines 2-6; figure 2)**

It would be obvious for one skilled in the art at the time of invention to modify Ernst et al. with the teachings of Kahkoska et al. so that the test set would be compatible with DSL equipment.

Regarding claims 13,24, Kahkoska et al. further discloses the modem module includes a device for storing an identification value that identifies the modem module to the test set. **(figure 2)** Item 107 in figure 2 is a lan connection as identified in figure 2. To communicate on a lan the ADSL modem must have a nic in it and every nic has a unique mac address so that it can communicate on a lan. The unique address is stored in the nic and the test set must use that address (identification value) to communicate with the ADSL modem.

Regarding claim 14, Kahkoska et al. further discloses the modem module is configured to perform xDSL connectivity testing. **(figure 2)**

Regarding claim 15, Kahkoska et al. further discloses as above but fails to disclose the modem module is configured to perform ATM connectivity testing.

As stated above for claim 7, It would be obvious for one skilled in the art at the time of invention to modify Ernst et al. to be compatible with recent technology.

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Regarding claims 16,22,28, Ernst et al. discloses a telecommunications transmission test set comprising: at least one signal input port; test circuitry coupled to the at least one signal input port, the test circuitry receiving signals from the signal input port and generating test data; a processor coupled to the test circuitry, the processor receiving test data and generating test results; a user input device coupled to the processor, the user input device sending commands to the processor; and a display coupled to the processor, the display receiving and displaying the test results, wherein the test set is configurable to perform line qualification or connectivity testing as selected by a command received from the user input device. **(figure 6A)**

Ernst et al. fails to disclose a modem module operatively coupled to the processor, wherein the modem module, when directed, receives and processes the test data to generate processed results, and wherein the processor generates the test results based, in part, on the processed results;

As stated above, Kahkoska et al. discloses the above limitation with respect to using an ADSL modem connected to the test equipment by a lan connection. Looking at figure 6A of Ernst et al. the network control box could be replaced by the ADSL modem of Kahkoska et al. to achieve the above limitation. **(abstract, lines 2-6; figure 2)**

It would be obvious for one skilled in the art at the time of invention to modify Ernst et al. with the teachings of Kahkoska et al. so that the test set would be compatible with DSL equipment.

Regarding claim 17, Ernst et al. further discloses line qualification includes digital multimeter tests, time domain reflection tests, and transmission line impairment tests.

Regarding claim 18, Ernst et al. further discloses connectivity testing includes bit-error-rate testing and loopback testing.

Regarding claim 19, Ernst et al. further discloses connectivity testing can be performed using a predetermined transmission technology.

Regarding claim 23, Kahkoska et al. further discloses the master tester unit includes a graphical display for showing the test results in graphical form. **(figure 2)**

Regarding claim 25, Kahkoska et al. further discloses the modem module determines a maximum transmission rate on the communications network based on the processed results.

Regarding claim 29, Kahkoska et al. discloses the DSL modem module is connected by a patch cord and fails to disclose that is configured as a plug-in card. **(figure 2; col. 1, lines 57-63)**

The DSL modem being connected via a card slot or a patch cable doesn't diminish the ability of the combination of Kahkoska and Ernst from performing the same tests as claimed above.

It would be obvious for one skilled in the art at the time of invention to modify Kahkoska's DSL modem to be configured as a plug-in card to perform DSL connectivity testing. The motivation for doing so is already disclosed in Kahkoska for making the test set a hand held device as being easier to carry around to different sites and the same reasoning applies here for making the DSL modem a plug-in card.

Regarding claim 30, Kahkoska et al. further discloses the DSL modem module is connected to the test set via an ethernet interface. **(figure 2; col. 2, lines 53-56)** One skilled in the art knows that ethernet connectivity means that devices that communicate using ethernet have a MAC address which is a unique stored identification value and that each communicating

device must know the other communicating devices MAC address to talk to it, as well as it's IP address.

Regarding claims 33,34, Kahkoska et al. further discloses the xDSL modem module emulates a central office xDSL modem, and wherein the test set is configured to test respective ends of a DSL loop with a second test set that includes a respective xDSL modem module that emulates a remote xDSL modem. **(figure 2, part 18 – emulates a CO xDSL, part 12 emulates a Remote xDSL, part 104 – test set, part 100 – remote test set – even though backwards the test is equivalent and so test set can be interchanged and is inherent to DSL technology)**

Allowable Subject Matter

Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments filed 8/13/2002 have been fully considered but they are not persuasive.

1. “Ernst fails to disclose connectivity testing”

Ernst discloses connectivity testing in figs. 12A,13 and col. 10, lines 60-66. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., what comprises connectivity testing) are not recited in the rejected claim(s). Although the claims are interpreted in light of the

specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

2. “Ernst fails to disclose a graphical display”

A display may display anything that is reasonable to represent results. The applicant is allowed to label their display in any way they want, e.g. graphical display, but a display is still a display.

3. “Lack of motivation to combine Ernst and Kahkoska”

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to change the network interface and perform the same testing, i.e. loopback and connectivity testing, is obvious. Nothing in the applicant's specification suggests that a different methodology to testing loopback and connectivity testing was necessary for xDSL, just that the prior art was not as complete in testing, so swapping out the interface for a different media type so as to provide compatibility with that media type was a proper motivation for combination.

4. “Ernst and Kahkoska fails disclose a module”

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on

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combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The question is whether it would or would not have been obvious for one skilled in the art to combine the teachings of Ernst and Kahkoska to create the same invention as the applicant claimed in claim 12. From figure 2 of Kahkoska one can see that parts 18 and 12 are separate parts of the DSL system, i.e. DSL modules. It is obvious that parts 104 and 100 are the parts of the invention claimed from Ernst and that adding the DSL modems are the updated claimed invention from Kahkoska (same assignee). BTW, the Examiner has actually used and reverse engineered the product from Kahkoska, so has an intimate knowledge of the product.

5. “Kahkoska uses patch cords therefore doesn’t need to know the mac address”

The device of Kahkoska still is using ethernet ports, a reasonable assumption is that TCP/IP is being used as the protocol to communicate over the link, the reference doesn’t say either way. The MAC address is used in the internet protocol layer therefore it must know the MAC address in order to transmit a fully formed ip packet, either in udp or tcp.

6. “[The Examiner’s] ... assertion fails to address that there are significant differences between the token ring technology of Ernst and any ATM connectivity testing”

In designs where a network element, i.e. switch, router, bridge, test harness, is going to be potentially connected to a plurality of different media types the interface components handle all the significant requirements of the particular media being connected by having dedicated circuitry for that media type. The circuitry beyond the interface contains the main functional software that performs the specific operations the device is meant to perform. The core of a network testing methodology, having been properly designed, does not need to handle the

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nuances of what media it is performing the test on, it just needs to know that it is still connected to a network. To interchange the interface of Ernst is completely reasonable when one considers the language of claim 1, "A test set for testing a communications network comprising:", "at least one signal input port", does this suggest that a specific media type is required for the test set, the answer is obviously no, it suggests that these tests can be performed on any kind of signal input port. "test circuitry coupled to the at least one signal input port, the test circuitry receiving signals from the signal input port and generating test data.", It says that some test circuitry, however configured, receives data from some kind of input and performs a test on it. How specific is that? The plausibility of a reasonable expectation of producing the same claimed invention is clearly reachable.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bottman [U.S. Pat. 5,530,367] – Pulse Based Cable Attenuation Measurement System.

Walsh [U.S. Pat. 5,382,910] – Dual Time Base Zero Dead Zone time Domain

Reflectometer

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Schultz whose telephone number is 703-305-2367. The examiner can normally be reached on M-F(7-4)(first bi-week) M-Th(7-4)(second bi-week).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 703-305-4366. The fax phone numbers for the

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organization where this application or proceeding is assigned are 703-305-9508 for regular communications and 703-305-9000 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

William Schultz
October 11, 2002



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